

## **Newton's Third Law Lab Exploration**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Table: \_\_\_\_\_ Table Role: \_\_\_\_\_ Section: \_\_\_\_\_

### Pre - Lab Questions:

1) What is Newton's Third Law of Motion state:

2) What is momentum?

3) What is the Law of Conservation of Momentum?

4) What are forces are involved in Newton's Third law?

## Part 1: Momentum

The Teacher will demonstrate momentum with two momentum cars.

A. Put one car in the center of the table. Place the other car at the end of the table. Be Sure the velcro ends are facing the opposite directions. Gently push the car on the end into the car in the center of the table. Describe & sketch what you observe in terms of momentum.

B. Place the both cars at the opposite ends of the table. Be Sure the velcro ends are facing the opposite directions. Gently push both cars toward each other of the table. Describe & sketch what you observe in terms of momentum.

C. Put one car in the center of the table. Place the other car at the end of the table. Be Sure the velcro ends are facing teach other. Gently push the car on the end into the car in the center of the table. Describe & sketch what you observe in terms of momentum.

## Part 2. Action - Reaction Forces

The technician will get 2 marbles for the table. The lead scientist will place one marble at the center of the table. The other marble will be placed about 12 centimeters away from the center marble. The Lead Scientist will gently push the outer marble into the center marble. Describe what you observe in terms of Newton's Third Law.

## Part 3: Measure Force Pairs

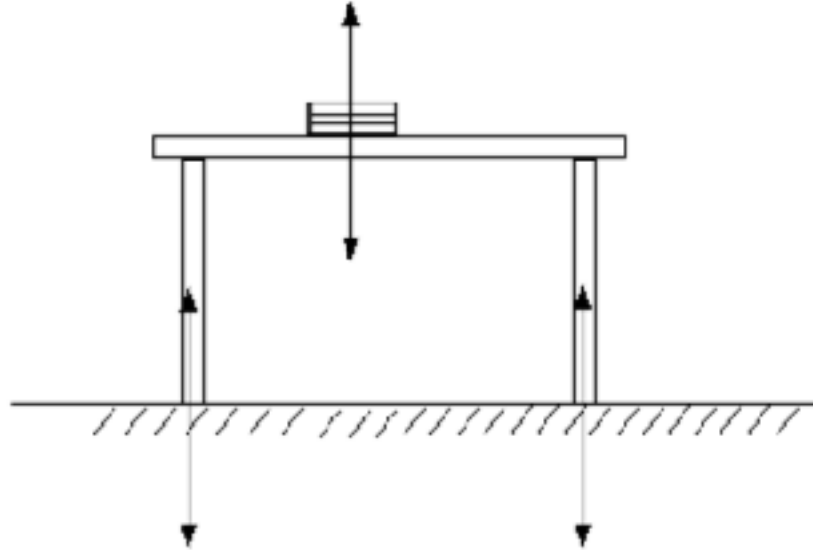
The technician will get 2 spring scales for the table.

A. Each person will hold a spring scale, the two scales will be hooked on each other. Each person will gently pull their spring scale away from the other person. Record your results below.

B. Continue to pull on both scales, but let the scales move toward one person. Record your results below.

C. Explain how this demonstrates Action - Reaction Forces.

Analyze & Conclude:



1) The image above shows a stack of books on a table. Explain what you see in terms of Newton's third law with the book on the table and the table on the floor.

2) Explain, in detail, using the third law of motion, how a person is able to walk forward.